

SUBJECT REQUIREMENT	LOCATION IN APPLICATION COMMENTS
<p>PART I CLOSURE PLAN, POST-CLOSURE PLANS AND FINANCIAL REQUIREMENTS</p> <p>401 KAR 34:070, 34:080, 34:090, 34:100, 34:110, 34:120</p> <p>I-1 <u>Closure Plan</u></p> <p>401 KAR 34:070 Section 3 requires a written closure plan that is consistent with Items I-1a through 1f of Part I.</p> <p>Where applicable, the specific requirements in 34:180 Section 9, 34:190 Section 5, 34:200 Section 6, 34:210 Section 8, 34:220 Section 8, 34:230 Section 6 and 34:240 Section 8, must be included.</p> <p>I-1a <u>Closure Performance Standards</u></p> <p>At a minimum, this section must include the closure performance standards language in 34:070 Section 2. Include a description of how closure will:</p> <ul style="list-style-type: none"> • Minimize the need for post-closure. • Minimize or eliminates releases of hazardous wastes, leachate, and contaminated rainfall to the air, groundwater, surface water, and surrounding land. • For miscellaneous units, describe how 401 KAR 34:250 Section 2 standards will be met. <p>I-1b <u>Closure Activities</u></p> <p>Description must identify how requirements of 34:070 Section 2, Sections 4-6 and applicable requirements of 34:180 Section 9, 34:190 Section 5, 34:200 Section 6, 34:210 Section 8, 34:220 Section 8, 34:230 Section 6 and 34:240 Section 8 will be met.</p> <p>I-1b(1) <u>Partial Closure Activities</u></p> <p>This section applies to existing facilities (Interim Status or permitted) that are closing one or more (but not all) of their hazardous waste management units. All other facilities, skip to I-1b(2). Check the definition of “Partial Closure” in 34:005 Section 1 (198)</p> <ul style="list-style-type: none"> • Identify the units to be closed • List the activities required for partial closure • List the units that will remain active and specify the operating life of these units <p>Sections I-1c through I-1f should be addressed only for units undergoing closure</p> <p>I-1b(2) <u>Final Closure Activities</u></p> <p>List and describe in detail the individual sequential activities required for closure</p>	

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<p>I-1c <u>Maximum Waste Inventory</u></p> <p>A description of the maximum inventory of wastes that could be in storage, treatment and disposal at any time during the life of the facility.</p> <ul style="list-style-type: none"> • The maximum amount must be in agreement with item 11 of the Part A. • Any waste that will be treated on-site needs to be included in the cost estimate with regard to labor and cost for treatment. <p>I-1d <u>Schedule for Closure</u></p> <p>Provide a schedule for final closure that includes:</p> <ul style="list-style-type: none"> • Estimated expected year of closure. • Closure schedule with total time to close, time for intervening closure activities, and inspection schedule during closure including activities to meet the requirements of 401 KAR 34:060 Section 12. • For land disposal facilities attempting closure by removal must also give their groundwater monitoring implementation schedule. <p>I-1d(1) <u>Time allowed for Closure</u> 401 KAR 34:070 Section 4</p> <p>The schedule for closure must state that:</p> <ul style="list-style-type: none"> • All hazardous waste will be treated, removed off-site, or disposed of on-site within 90 days from receipt of final volume of waste. • All closure activities will be completed within 180 days from receipt of final volume of waste. <p>I-1d(1)(a) <u>Extensions for Closure Time</u></p> <p>Applicants must include a statement that, if required, any request for an extension to the closure period will be made according to the requirements of 401 KAR 34:070 Section 4(2)</p> <p>I-1e <u>Inventory Disposal, Removal or Decontamination of Equipment</u></p> <p>A description of how all facility equipment and structures will be decontaminated or disposed of when closure is completed. The following should be included:</p> <ul style="list-style-type: none"> • List of equipment/structures • Criteria for determining contamination • Description of decontamination procedures including clean-up materials, equipment and residues • Disposal procedures for contaminated soil, rinse water, etc. • Proposed procedures/means to demonstrate that decontamination has been effective. 	

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<p>I-1e(1) <u>Closure of Containers</u> 401 KAR 34:180 Section 9</p> <p>A description of how at closure, all hazardous waste residues will be removed from the containment system, and how remaining containers, bases, and soil containing or contaminated with hazardous waste residues will be decontaminated or removed:</p> <ul style="list-style-type: none"> • Hazardous waste removal and disposal • Container decontamination and disposal • Site decontamination and disposal including linings, soil, and washes • Verification of decontamination • Maximum inventory 	
<p>I-1e(2) <u>Closure of Tanks</u> 401 KAR 34:190 Section 8</p> <p>A description of how, at closure of a tank system, all waste residues, contaminated containment system components (liner, etc.), contaminated soils, and structures and equipment contaminated with waste, will be decontaminated or removed and managed as hazardous waste. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements.</p> <p>If it is demonstrated that not all contaminated soil can be practicably removed or decontaminated as required, then the tank system must be closed and post-closure care performed in accordance with the closure and post-closure care requirements that apply to landfills. In addition, for the purposes of closure, post-closures, and financial responsibility, such a tank system is then considered to be a landfill, and all applicable requirements must be met.</p> <p>If a tank system does not have secondary containment that meets the requirements and is not exempt from the secondary containment requirements, then:</p> <ul style="list-style-type: none"> • The closure plan for the tank system must include both a plan for complying with tank closure requirements and a contingent post-closure plan. • A contingent post-closure plan for complying with this requirement must be prepared and submitted as part of the permit application. • The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure. • Financial assurance must be based on the higher cost estimates. • For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills. 	

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<ul style="list-style-type: none"> For new tank systems that will close with waste in place, compliance with 401 KAR 38:500. <p>I-1e(3) <u>Closure of Waste Piles</u> 401 KAR 34:210 Section 8</p> <p>The application must describe how all hazardous waste residues, contaminated containment system components (liners, etc.), contaminated with waste and leachate will be removed or decontaminated at closure and managed as hazardous waste. If any wastes, waste residues or contaminated materials or soils will remain after closure, provide plans for closing the pile as a landfill (I-i.e.(6)) and provide post-closure plan (I-2). Piles without liners or with liners that do not meet the requirements of D-3e must also provide contingent plans for closing the facility as a landfill (I-1d(6)) and a contingent post-closure (I-2), except for dry, enclosed piles meeting the requirements of D-3b or piles for which a liner exemption is sought in accordance with D-3c.</p> <ul style="list-style-type: none"> Procedures and criteria for determining whether or not decontamination has been successful. Sampling and analytical techniques. Continuance of treatment during closure (if appropriate). <p>I-e(4) <u>Closure of Surface Impoundments</u> 401 KAR 34:200 Section 6</p> <p>A description of how all hazardous waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate will be removed or decontaminated at closure and managed as hazardous waste. If any wastes, waste residues or contaminated materials or soils will remain after closure, provide plans for closing the surface impoundment as landfill (I-1e(6)) and provide post-closure plans (I-2). Surface impoundments without liners or with liners that do not meet the requirements of D-4d must also provide contingent plans for closure as a landfill (I-1e(6)) and a contingent post-closure plan (I-2) except for impoundments requesting a liner exemption in accordance with D-4b(1).</p> <ul style="list-style-type: none"> Procedure and criteria for determining whether or not decontamination has been successful. Sampling and analytical techniques. Continuance of treatment during closure (if appropriate). <p>I-1e(5) <u>Closure of Incinerators</u> 401 KAR 34:240 Section 8</p> <p>Description of how at closure all hazardous residues will be removed from the incinerator, associated ductwork, piping, air pollution control equipment, sumps, and any other structures or operating equipment such as pumps, valves, etc., that have come into contact with the hazardous waste. Alternatively, a description of how the incinerator and associated units and equipment will be dismantled and disposed of as a hazardous waste will suffice.</p>	

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<p>I-1e(5) <u>Closure of Landfills</u> 401 KAR 34:230 Section 6</p> <p>Provide detailed plans and an engineering report which describes the final cover components in detail. These detailed plans and engineering report must describe how the final cover will:</p> <ul style="list-style-type: none"> • Provide long-term minimization of migration of liquids through closed landfill. • Function with minimum maintenance. • Promote drainage and minimize erosion/abrasion. • Settle/subside without losing integrity. • Be less permeable than bottom liners or subsoils. 	
<p>I-1e(7) <u>Closure of Land Treatment</u> 401 KAR 34:220 Section 6</p> <p>During closure of land treatment facilities the owner or operator must comply with the following:</p> <ul style="list-style-type: none"> • Continued all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required, except to the extent such measures are inconsistent with 34:220 Section 8. • Continue all operations in the treatment zone to minimize run-off of hazardous constituents. • Maintain the run-on control system. • Maintain the run-off management system. • Control wind dispersal of hazardous waste if required. • Continue to comply with any prohibitions or conditions concerning growth of food-chain crops. • Continue unsaturated zone monitoring except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone. • Establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance. 	
<p>I-1f <u>Closure Certification</u> (401 KAR 35:070 Section 6)</p> <p>When closure is complete the owner or operator shall submit to the Director certification by the owner/operator and by an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.</p> <p>The applicant should provide statement in the closure plan that such certification will be submitted within 60 days of completion.</p> <p>The owner/operator shall put the following statements in the closure plan:</p>	

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<ul style="list-style-type: none"> • The facility shall enter into an Agreed Order with the Cabinet stipulating compliance with 401 KAR 34:060 Section 12 regarding corrective action of waste management units before closure is certified. • The facility will provide documentation that groundwater beneath the facility (if the facility is subject to 401 KAR 34:060 or 35:060) is not contaminated, before closure is certified. (For facilities subject to groundwater monitoring requirements only). <p>I-2 <u>Post-Closure Plan</u> 401 KAR 34:070 Sections and 9 and 38:090 Section 2(13)</p> <p>I-2a <u>Post-Closure Plan</u></p> <p>An owner/operator of a disposal facility must have a written post-closure plan, or ,if applicable, a contingent post-closure plan. A copy of the approved plan and all revisions to the plan must be kept at the facility until the post-closure care begins. Landfill, surface impoundment, waste pile, and tank post-closure plans should address items I-2a, b, c, g, h; land treatment until post-closure plan, items 1-2d, g, and h; miscellaneous units should address items I-2a, b, d, e, f, g, and h.</p> <p>I-2b <u>Inspection Plan</u></p> <p>A description of the inspections to be conducted during the post-closure care period, their frequency, the inspection procedures, and the logs to be kept. The following items, as applicable, should be included in the inspection plan:</p> <ul style="list-style-type: none"> • Security control devices • Erosion damage • Cover settlement, subsidence and displacement • Vegetative cover condition • Integrity of run-on and run-off control measures • Cover drainage system function • Leachate collection/detection and removal system maintenance • Gas venting system • Well condition • Benchmark integrity <p>The rationale to be used to determine the need for corrective maintenance activities.</p> <p>I-2c <u>Monitoring Plan</u></p> <p>A description of the monitoring to be conducted during the post-closure care period, including, as applicable, the procedures for conducting the following operations and evaluating the data gathered should include:</p>	

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<ul style="list-style-type: none"> • Groundwater monitoring (Follow Part E of this checklist) • Leachate collection/detection and removal <p>I-2d <u>Maintenance Plan</u></p> <p>A description of preventative and corrective maintenance procedures, equipment procedures, equipment requirements and material needs. Include the following items in the maintenance plan, as applicable:</p> <ul style="list-style-type: none"> • Repair of security control devices. • Erosion damage repair. • Correction of settlement, subsidence and displacement. • Mowing, fertilization and other vegetative cover maintenance. • Repair of run-on and run-off control structures. • Leachate collection/detection system maintenance. • Well replacement. • The rationale to be used to determine the need for corrective maintenance activities. <p>I-2c <u>Land Treatment</u></p> <p>A description of the operation, inspection, and maintenance programs to be used at the closed facility. Include descriptions of the procedures for conducting the following frequencies at which they are to be conducted:</p> <ul style="list-style-type: none"> • Continuance of land treatment. • Vegetative cover maintenance. • Maintenance of run-on control systems and run-off management systems. • Wind dispersal control. • Control of food chain crops. • Unsaturated zone monitoring. <p>A description of the program for sampling and analysis of soil-pore liquid to detect the migration of dissolved constituents below the treatment zone.</p> <p>The description must include the following items:</p> <ul style="list-style-type: none"> • Identification of the sampling locations, if known, and the rationale used to select these locations. • The sampling frequency and a demonstration that this frequency is adequate considering the potential for migration of hazardous constituents out of the treatment zone. • Identification used to collect soil-pore liquid samples. • A description of the procedures used to install the soil-pore liquid sampling devices. • A description of the procedures for sampling soil-pore liquids including methods for sample preparation, preservation and transport. 	

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<ul style="list-style-type: none"> • Identification of the analytical methods used to determine the concentrations of hazardous constituents in the soil-pore liquid. • A description of the methods to be used to assure sample integrity throughout sampling, transportation, analysis and reporting. • A description of the sampling and analytical program used to establish background soil-pore liquid concentrations of hazardous constituents, including: <ul style="list-style-type: none"> • sample locations and depths • verification that the location is representative of active site conditions • frequency of sampling • an indication that background values will be expressed in a form that will permit their comparison with active site values. • A description of the statistical method that will be used to determine if significant differences exist between background and treatment zone concentrations of hazardous constituents in soil-pore liquids. • A justification of any principal hazardous constituents proposed for use in the soil-pore liquid monitoring program. • A description of the program for sampling and analysis of soil cores to detect the migration of hazardous constituents below the treatment zone. This description must include the following items: <ul style="list-style-type: none"> • Identification if the sampling locations, if known, and the rationale used to select these locations. • The sampling frequency and a demonstration that this frequency is adequate considering the potential for migration of hazardous constituents out of the treatment zone. • Identification of the sampling equipment used to collect soil core samples. • A description of the procedures for sampling soil core including methods for sample preparation, preservation and shipment. • Identification of the analytical methods used to determine the concentrations of hazardous constituents in the soil cores. • A description of the methods to be used to assure sample integrity throughout sampling, transportation, analysis and reporting. • A description of the sampling and analytical program used to establish background soil core concentrations of hazardous constituents, including: <ul style="list-style-type: none"> • sample locations and depths • verification that the location is representative of active site conditions • frequency of sampling • an indication that background values will be expressed in a form that will permit their comparison with active site values. 	

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<ul style="list-style-type: none"> • A description of the statistical methods that will be used to determine if significant differences exist between background and treatment zone concentrations of hazardous constituents in soil cores. • A justification of any principal hazardous constituent proposed for use in the soil core monitoring program. <p>I-2f <u>Post-Closure Care for Miscellaneous Units</u></p> <p>A detailed description of the plans to ensure protection of human health and the environment, include the prevention of any releases to groundwater or subsurface environment, surface water or wetlands or on the soil surface; or to air. This will include providing related information from D-8...</p> <p>I-2g <u>Post Closure Security</u></p> <p>Indicate which security provisions will continue during post-closure when hazardous waste will remain exposed after completion of partial or final closure or access by the public or domestic livestock may pose a hazard to human health.</p> <p>I-2h <u>Post-Closure Contact</u></p> <p>Provide the name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.</p> <p>I-3 <u>Notices Required for Disposal Facilities</u></p> <p>I-3a <u>Certification of Closure</u></p> <p>A statement by the applicant which indicates that within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit; and within 60 days of the completion of final closure, closure certification will be submitted to the Director. The certification must certify that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specification of the approved closure plan. The certification must be signed by the owner/operator and by an independent professional engineer registered in Kentucky (or by an independent qualified soil scientist in the case of a land treatment closure).</p> <p>I-3b <u>Survey Plat</u></p> <p>A statement by the applicant which indicates that no later than the submission of certification of closure of each hazardous waste disposal unit, a survey plat indicating the location and dimensions of landfill cells or other disposal units with respect to permanently surveyed benchmarks, will be submitted to the local zoning authority (or authority with jurisdiction over local land use) and to the Director. The plat must be prepared and certified by a professional land surveyor and must contain a note, prominently displayed, which states the owner/operator's</p>	

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<p>obligation to restrict disturbance or the disposal unit in accordance with 401 KAR 34:070 section 7.</p> <p>I-3c <u>Notice to Local and Authority</u></p> <p>Documentation by applicant that within 60 days after closure a record of the type, location and quantity of hazardous waste within each cell or disposal area will be submitted to the appropriate local land use authority and to the Director.</p> <p>I-3d <u>Post-Closure Certification</u></p> <p>Provide a statement which indicates that within 60 days of completion of the post-closure care period for each hazardous waste disposal unit, certification will be submitted to the Director. The certification must certify that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications of the approved post-closure plan. The certification must be signed by the owner/operator and by an independent professional engineer registered in the Commonwealth of Kentucky.</p> <p>I-3e <u>Notice in Deed to Property</u></p> <p>Documentation by applicant that he has or will record a notation on the facility deed, or other instrument examined during a title search, that notifies any potential purchase of the property that:</p> <ul style="list-style-type: none"> • The property has been used to manage hazardous wastes. • Use of the land is restricted to activities that will not disturb integrity of final cover system, or monitoring system during post-closure care period. • Requirements stated under 1-3a above have been complied with. <p>I-4 <u>Closure Cost Estimate</u> 401 KAR 34:090 Section 1</p> <p>A copy of the most recent closure or contingent closure cost estimate, prepared in accordance with 34:090 Section 1. A recommended tool for developing the closure cost estimate is EPA's RCRA Closure and Post-Closure Care Cost Estimating Manual or Software. Check with the permit reviewer for a copy.</p> <ul style="list-style-type: none"> • The cost estimate is "fully loaded" when the cost of final closure at the point in the facility's active life will make closure most expensive. • Cost estimate must be based on a third party hired to close the facility • Cost estimate shall have no salvage credits • Estimate calculated based on current year costs • Cost adjusted for inflation annually from anniversary date of first cost estimate • Any waste that will be treated on-site needs to be included in the cost estimate with regard to labor and cost for treatment. 	

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<p>I-5 <u>Financial Assurance Mechanism for Closure</u> 401 KAR 34:090 Section 2</p> <p>A copy of the established financial assurance mechanism for facility closure adopted must be included in the submittal. The submittal must be accompanied by one of the financial instruments listed below. Please refer to the Kentucky hazardous waste regulations for more details. All forms must be submitted on state approved forms except letters of Credit issued by banks. Banks may type or submit their own form; however, the wording must be consistent with state forms.</p> <p>I-5a <u>Closure Instruments</u> 401 KAR 34:090 Section 2</p> <ul style="list-style-type: none"> • Closure Trust Fund 401 KAR 34:090 Section 3 • Surety Bond Guaranteeing Payment into a Closure Trust Fund 401 KAR 34:090 Section 4 • Surety Bond Guaranteeing Performance of Closure 401 KAR 34:090 Section 5 • Closure Letter of Credit 401 KAR 34:090 Section 6 • Closure Insurance 401 KAR 34:090 Section 7 • Financial Test and Corporate Guarantee for Closure 401 KAR 34:090 Section 8 • Cash Account and Certificate of Deposit 401 KAR 34:090 Section 9 <p>I-5b <u>Financial Assurance Mechanism for Post-Closure</u> 401 KAR 34:100 Section 2</p> <ul style="list-style-type: none"> • Trust Fund 401 KAR 34:100, Section 3 • Surety Bond Guaranteeing Payment, Section 4 • Surety Bond Guaranteeing Performance, Section 5 • Letter of Credit, Section 6 • Post-Closure Insurance, Section 7 • Financial Test and/or Corporate Guarantee, Section 8 • Cash Account and Certificate of Deposit, Section 9 <p>I-5c <u>Liability Instruments</u> 401 KAR 34:120</p> <ul style="list-style-type: none"> • Hazardous waste facility Liability Endorsement, Section 1 • Certificate of Liability Insurance, Section 1 • Financial Test (Self Insurance), Section 6 • Corporate Guarantee, Section 7 • Letter of Credit, Section 8 • Surety Bond, Section 9 • Trust Fund, Section 10 	